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SPLIT DIE FOR FORMING GROOVED WORKPIECES

The invention relates to a method of forming a tubular fastener, and more particularly to a method of forming a radially expandable externally grooved tubular fastener from metal.

Such fasteners are used to fasten together two or more workpieces by inserting a fastener in a suitable aperture through the workpieces, and radially expanding at least part of the tubular fastener so as to engage the workpieces. Commonly the tubular fastener is provided with a radially enlarged head at one end which contacts the face of the nearer workpiece. In this case the fastener may engage all of the workpieces, or only the workpiece most remote from the head. Radial expansion of the tubular fastener may be achieved by pushing or pulling through its bore the head of a mandrel.

Such fasteners and their method of installation are well-known in the mechanical assembly industry.

The present invention aims to provide an improved and simplified method of forming such fasteners, needing few manufacturing operations.

The invention provides, in one of its aspects, a method of forming a radially expandable externally grooved tubular fastener from metal, as defined in claim 1 of the accompanying claims. Further preferred features of the present invention are set out in claims 2 to 16. The invention includes a fastener manufactured by a method according to the invention.

Some specific embodiments of the present invention will now be described by way of example and with reference to the accompanying drawings, in which:-

- 30 1A to 1H and 1J to 1N
Figures 1A to 1N illustrate a first method;
2A to 2H, 2J and 2K
Figures 2A to 2K illustrate a second method;
3A to 3H and 3J to 3M
35 Figures 3A to 3M illustrate a third method; and

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